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## NOTICE OF ALLOWANCE AND FEE(S) DUE

22852

7590

02/19/2004

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 1300 I STREET, NW WASHINGTON, DC 20005

EXAMINER

PAPER NUMBER

SPEAR, JAMES M

ART UNIT

DATE MAILED: 02/19/2004

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/642,160	08/21/2000	Bent Hojgaard	06063.0019	7752

TITLE OF INVENTION: PHARMACEUTICAL DELIVERY SYSTEM FOR VITAMIN C AND VITAMIN E AND USE OF A COMBINATION OF VITAMIN C AND E FOR PREVENTING OR TREATING CONDITIONS INVOLVING OXIDATIVE STRESS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1330	\$0	\$1330	05/19/2004

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. <u>PROSECUTION ON THE MERITS IS CLOSED</u>. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

#### HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.
- B. If the status is changed, pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above and notify the United States Patent and Trademark Office of the change in status, or

If the SMALL ENTITY is shown as NO:

- A. Pay TOTAL FEE(S) DUE shown above, or
- B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check the box below and enclose the PUBLICATION FEE and 1/2 the ISSUE FEE shown above.
- ☐ Applicant claims SMALL ENTITY status. See 37 CFR 1.27.
- II. PART B FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.
- III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

### PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail

Mail Stop ISSUE FEE Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450

or <u>Fax</u>

(703) 746-4000

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 4 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as

indicated unless corrected maintenance fee notification	below or directed otherwise ons.	in Block 1, by (a) s	pecifying a new c	orrespondence address	; and/or (b) indicating a sepa	arate "FEE ADDRESS" for
CURRENT CORRESPONDENCE ADDRESS (Note: Legibly mark-up with any corrections or use Block 1)			Block 1)	Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, mus		
	7590 02/19/2004			have its own certificat	e of mailing or transmission.	
FINNEGAN, HI DUNNER LLP 1300 I STREET, I	ENDERSON, FARAI	BOW, GARRET	TT &	I hereby certify that the States Postal Service addressed to the Mai	rtificate of Mailing or Trans his Fee(s) Transmittal is bein with sufficient postage for fir il Stop ISSUE FEE address PTO, on the date indicated bel	g deposited with the United st class mail in an enveloped above, or being facsimile
WASHINGTON,					_	(Depositor's name)
					_	(Signature)
						(Date)
APPLICATION NO.	FILING DATE	FIF	RST NAMED INVEN	TOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/642,160	08/21/2000	<b>1</b>	Bent Hojgaard		06063.0019	7752
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APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PU	JBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
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SPEAR,	, JAMES M	1615		424-458000	<b>-</b>	·
CFR 1.363).  Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  The Fee Address" indication (or "Fee Address" Indication form attorneys attached. The of a Customer attorneys attached the of a Customer attorneys.			names of up to agents OR, altern firm (having as a	ng on the patent front page, list (1) the p to 3 registered patent attorneys or alternatively, (2) the name of a single as a member a registered attorney or the names of up to 2 registered patent		
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3. ASSIGNEE NAME AN	D RESIDENCE DATA TO I	BE PRINTED ON TH	E PATENT (print of	or type)		
PLEASE NOTE: Unles been previously submitt (A) NAME OF ASSIGI	ss an assignee is identified be ted to the USPTO or is being NEE	submitted under separ	ate cover. Comple	e patent. Inclusion of a tion of this form is NO 'Y and STATE OR CO	T a substitute for filing an ass	ate when an assignment has ignment.
Please check the appropria	te assignee category or catego	ories (will not be print	ed on the patent);	individual 🔾	corporation or other private g	roup entity 🚨 governmen
4a. The following fee(s) ar	e enclosed:	4b. P	ayment of Fee(s):			
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application. Confidential estimated to take 12 min completed application for case. Any comments or suggestions for reducing Patent and Trademark 22313-1450. DO NOT SEND TO: Commissione Under the Paperwork R	nation is required by 37 CFF to the public which is to fit it is governed by 35 U.S.C. utes to complete, including form to the USPTO. Time win the amount of time you this burden, should be sent Office, U.S. Department SEND FEES OR COMPLIER for Patents, Alexandria, Virtual Control of 1995, no	athering, preparing, a cathering, preparing, a cathering, preparing, a cathering, preparing up require to complete to the Chief Informa of Commerce, Ale: ETED FORMS TO 1 ginia 22313-1450 persons are required	In scollection is and submitting the individual this form and/or tion Officer, U.S. xandria, Virginia THIS ADDRESS.			
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### UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virginia 22313-1450 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/642,160	08/21/2000	Bent Hojgaard	06063.0019	7752
22852	7590 02/19/2004		EXAM	INER
FINNEGAN, HENDERSON, FARABOW, GARRETT &			SPEAR, JAMES M	
DUNNER LLP			ART UNIT	PAPER NUMBER
1300 I STREET, NW WASHINGTON, DC 20005			1615	
			DATE MAILED: 02/19/2004	

# Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)

(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) system (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (703) 305-1383. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

	Application No.	Applicant(s)
	09/642,160	HOJGAARD ET AL.
Notice of Allowability	Examiner	Art Unit
	James M Speer	1615
	James M Spear	1015
The MAILING DATE of this communication apperature All claims being allowable, PROSECUTION ON THE MERITS IS herewith (or previously mailed), a Notice of Allowance (PTOL-85) NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT R of the Office or upon petition by the applicant. See 37 CFR 1.313	(OR REMAINS) CLOSED in or other appropriate communication is s	this application. If not included nication will be mailed in due course. <b>THIS</b>
1. $\boxtimes$ This communication is responsive to <u>THE AMENDMENT F</u>	FILED December 23, 2003.	
2. X The allowed claim(s) is/are 38,39,46-50,57,58,60,67,69-71	<u>and 74</u> .	
3. $\boxtimes$ The drawings filed on <u>28 August 2000</u> are accepted by the	Examiner.	
<ul> <li>4. Acknowledgment is made of a claim for foreign priority ur</li> <li>a) All b) Some* c) None of the:</li> <li>1. Certified copies of the priority documents have</li> <li>2. Certified copies of the priority documents have</li> </ul>	e been received.	•
3. Copies of the certified copies of the priority do		
International Bureau (PCT Rule 17.2(a)).		
* Certified copies not received:		
Applicant has THREE MONTHS FROM THE "MAILING DATE" noted below. Failure to timely comply will result in ABANDONN THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.		a reply complying with the requirements
5. A SUBSTITUTE OATH OR DECLARATION must be subm INFORMAL PATENT APPLICATION (PTO-152) which give		
<ul> <li>6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must</li> <li>(a) ☐ including changes required by the Notice of Draftspers</li> <li>1) ☐ hereto or 2) ☐ to Paper No./Mail Date</li> <li>(b) ☐ including changes required by the attached Examiner's Paper No./Mail Date</li> </ul>	son's Patent Drawing Review . s Amendment / Comment or	in the Office action of
Identifying indicia such as the application number (see 37 CFR 1 each sheet. Replacement sheet(s) should be labeled as such in t		
<ol> <li>DEPOSIT OF and/or INFORMATION about the depo attached Examiner's comment regarding REQUIREMENT</li> </ol>		
Attachment(s)  1. ☐ Notice of References Cited (PTO-892)  2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)	6. ☐ Interview Su Paper No./l	ormal Patent Application (PTO-152) Immary (PTO-413), Mail Date
<ol> <li>Information Disclosure Statements (PTO-1449 or PTO/SB/0 Paper No./Mail Date</li> </ol>	08), /. ∐ Examiner's A	Amendment/Comment
4. Examiner's Comment Regarding Requirement for Deposit		Statement of Reasons for Allowance
of Biological Material	9. ☐ Other	James M. Spear  James M Spear  Primary Examiner  Art Unit: 1615

Application/Control Number: 09/642,160

Art Unit: 1615

- 1. The following is an examiner's statement of reasons for allowance:
  - a. Applicants show a delivery system comprised of slow release vitamin C and plain release vitamin E and a method of treating oxidative stress disorders with said delivery system. The prior art shows modified release compositions comprised of vitamin C and vitamin E. Valducci EP 0 820 703 A1, considered the closest prior art of record, shows prolonged release formulations comprised of these vitamins. The prior art does not show nor fairly suggest applicants' particular combination of slow release vitamin C and plain release vitamin E, wherein vitamin C is present in an amount to deliver a daily dose of 60 mg to 2 gm vitamin C and vitamin E is present in an amount to deliver 50 mg to 500 mg alpha tocopherol. The vitamins are present in amounts so as to obtain vitamin C and vitamin E in a ratio in the blood plasma of 1:1 to 3:1 such that the delivery system provides a concentration of vitamin E in the blood plasma of at least 20 micro moles per liter and a concentration of vitamin C in the blood plasma of at least 40 micro moles per liter.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Claims 38, 39, 46-50, 57, 58, 60, 67, 69-71 and 74 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M Spear whose telephone number is 571

Application/Control Number: 09/642,160 Page 3

Art Unit: 1615

272 0605. The examiner can normally be reached on Monday thru Friday from 6:30 AM to 3 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman K Page, can be reached on 571 272 0602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

February 12, 2004

James M Spear
Primary Examiner
Art Unit 1615
James M, Spean



A1/1615

BOX AF RESPONSE UNDER 37 C.F.R. 1.116 EXPEDITED PROCEDURE EXAMINING GROUP 1610

> PATENT Customer No. 22,852 Attorney Docket No. 06063.0019

IN THE UNITED STATES PATENT AND TRADEMARK QFFICE

In re Application of:	) DEC :
Bent HØJGAARD et al.	DEC 3 0 2003  TECH CENTER 1600/2900  Group Art Unit: 1615
Application No.: 09/642,160	) Group Art Unit: 1615
Filed: August 21, 2000	) Examiner: J. SPEAR

For: A PHARMACEUTICAL DELIVERY SYSTEM FOR VITAMIN C AND VITAMIN E AND USE OF A COMBINATION OF VITAMIN C AND E FOR PREVENTING OR TREATING CONDITIONS INVOLVING OXIDATIVE STRESS

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

# **AMENDMENT AFTER FINAL REJECTION UNDER 37 C.F.R. § 1.116**

Sir:

In response to the Final Office Action mailed September 23, 2003, Applicants request that this application be amended as follows.

FINNEGAN HENDERSON FARABOW GARRETT & DUNNER LLP

Application No. 09/642,160 Attorney Docket No. 06063.0019

### IN THE CLAIMS:

Please amend claim 46 as indicated in the following claim listing:

28. (Previously Presented) A delivery system for oral delivery of the antioxidants vitamin C and vitamin E to obtain high concentrations thereof and a controlled ratio between vitamin C and vitamin E in blood plasma in humans or animals, characterized in that it has a slow release of vitamin C and a plain release of vitamin E;

wherein vitamin C is present in an amount in the delivery system so as to deliver a daily dose corresponding to 60 mg - 2 g of vitamin C, and vitamin E is present in an amount in the delivery system so as to deliver a daily dose corresponding to 50 mg - 500 mg of  $\alpha$ -tocopherol, and the antioxidants are present in amounts so as to obtain vitamin C and vitamin E in a ratio in the blood plasma of 1:1 to 3:1;

wherein the solubility of vitamin E is such that at least 90% of vitamin E is dissolved in less than 30 minutes under the conditions of Test B; and

wherein the solubility of vitamin C is such that less than 40% of vitamin C is dissolved after 1 hour under the conditions of Test A; and

wherein said delivery system achieves a concentration of vitamin E in the blood plasma of at least 20  $\mu$ mol/liter and a concentration of vitamin C in the blood plasma of at least 40  $\mu$ mol/liter.

FINNEGAN HENDERSON FARABOW GARRETT & DUNNERLLP

2 39. (Previously Presented) A delivery system according to claim 38, characterized in that it is a system comprising a tablet comprising at least two non-identical delivery principles, wherein

- a) one delivery principle comprises
  - i) vitamin C;
  - ii) a pharmaceutically acceptable excipient for controlling the slow release of vitamin C; and
  - iii) other pharmaceutically acceptable excipients; and
- b) another delivery principle comprises
  - i) vitamin E; and
  - ii) pharmaceutically acceptable excipients.

3 46. (Currently Amended) A delivery system according to claim 38, characterized in that vitamin C is ascorbic acid and vitamin E is selected from the group comprising d-α-tocopheryl acetate, d-α-tocopheryl acid succinate, d-α-tocopherol, d-β-tocopherol, d-γ-tocopherol, d-γ-tocopherol, d-δ-tocopherol, d-α-tocopherol, d-α-tocopheryl acetate, dl-α-tocopheryl calcium succinate, dl-α-tocopheryl nicotinate, dl-α-tocopheryl linoleate/oleate, and all other possible derivatives or stereo isomeric forms of the above compounds.

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Application No. 09/642,160 Attorney Docket No. 06063,0019

47. (Previously Presented) A delivery system according to claim 38, wherein the daily dose of vitamin C corresponds to 100 mg - 1.5 g of ascorbic acid.

 $\frac{1}{2}$  48. (Previously Presented) A delivery system according to claim 36, wherein the daily dose of vitamin E corresponds to 100 mg - 250 mg of α-tocopherol.

(Previously Presented) A delivery system according to claim 38, wherein the daily dose of vitamin C and E is delivered by 1 to 8 dosage units.

7.50: (Previously Presented) A delivery system according to claim 36, wherein the daily dose of vitamin C and E is delivered by 1 or 2 dosage units.

8 57. (Previously Presented) A method of treating oxidative stress disorders, said method comprising administering to an individual a combination of vitamin C and vitamin E in sufficient amounts to raise the concentration of said vitamins in blood plasma to a ratio of approximately 1:1 to 3:1, in not more than 8 weeks from the first administration,

wherein vitamin C is released by a slow release formulation and vitamin E is released by a plain release formulation; and

wherein the concentration of vitamin E in the blood plasma is at least 20  $\mu$ mol/liter and the concentration of vitamin C in the blood plasma is at least 40  $\mu$ mol/liter; and

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Application No. 09/642,160 Attorney Docket No. 06063.0019

wherein the administering is in amounts corresponding to a daily dose of 60 mg - 2 g of vitamin C and corresponding to a daily dose of 50 mg - 500 mg of α-tocopherol.

9 58. (Previously Presented) A method according to claim 57, wherein the raising is within 4 weeks.

60. (Previously Presented) A method according to claim 57, wherein the method achieves, in blood plasma, a concentration of vitamin C of from about 102 to 142 μmol/liter, and a concentration of vitamin E of from about 46 to 65 μmol/liter.

(Previously Presented) A method of treating oxidative stress disorders, said method comprising daily administering to an individual at least one dosage unit comprising a combination of vitamin C and vitamin E in sufficient amounts to raise the concentration of said vitamins in blood plasma to a controlled ratio;

wherein said vitamin C is formulated in a slow-release preparation and vitamin E is formulated only in plain-release formulation;

wherein the concentration of vitamin E in the blood plasma is at least 20  $\mu$ mol/liter, and the concentration of vitamin C in the blood plasma is at least 40  $\mu$ mol/liter;

wherein the antioxidants are present in amounts so as to obtain vitamin C and vitamin E in a ratio in the blood plasma of 1:1 to 3:1;

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Application No. 09/642,160 Attorney D cket No. 06063.0019

wherein the at least one dosage units delivers a daily dose corresponding to 60 mg - 2 g of vitamin C and a daily dose corresponding to 50 mg - 500 mg of  $\alpha$ -tocopherol; and

wherein the formulation of vitamin E is such that at least 90% of vitamin E is dissolved in less than 30 minutes under the conditions of Test B, and the formulation of vitamin C is such that less than 40% of vitamin C is dissolved after 1 hour under the conditions of Test A.

Previously Presented) A method according to claim 67, wherein the method achieves, in blood plasma, a concentration of vitamins C of from about 102 to 142 μmol/liter, and a concentration of vitamin E of from about 46 to 65 μmol/liter.

(Previously Presented) A method according to claim of, wherein the at least one dosage unit is at most 8 dosage units.

(Previously Presented) A method according to claim 70, wherein the at least one dosage unit is 1 or 2 dosage units.

74. (Previously Presented) A delivery system according to claim 38, substantially free of histidine.

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